Abstract Submitted
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Modeling wall/divertor effects on transport in JET trace tritium experiments[1] D.L. HILLIS, J. HOGAN, Fusion Energy Division ORNL, K-D. ZASTROW, EURATOM / UKAEA Culham, D. COSTER, IPP-Garching, D. REITER, FZ-Juelich, JET-EFDA CONTRIBUTORS, EFDA — To study SOL effects on particle transport scaling, using available edge data, we analyze three JET T puffing cases with NBI heating, covering a range in n_e and with varying ELM behavior. Self- consistent near-inlet wall fluxes and transient ELM effects on wall saturation are calculated with the solps (b2-Eirene) code, while wall recycling is modeled with the WDIFFUSE code. As the measured fueling efficiency for T puffing pulses is <10%, near-inlet wall or divertor strike point recycling dominates. The plausible assumption for core T recycling, that $0<R_{Tcore}<1$, may not be valid. Even trace T puffing is found to produces a local high density, T enriched region near the gas inlet. Variations in ELM activity lead to transient particle flux affecting saturation properties. Progress in clarifying the roles of these processes could be achieved through dedicated experiments on edge/pedestal trace T transport, to complement previous core studies.

[1]See the Appendix of J.Pamela et al., Fusion Energy 2004 (Proc. 20th Int. Conf. Vilamoura, 2004) IAEA, Vienna (2004); Acknowledgement:ORNL. Supported by U.S.DOE Contract DE-AC05-00OR22725

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